

ΔΙΑΛΕΞΗ



## "Algorithmic Transformations and Growth Processes for Programmable Matter"

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### Περίληψη – Abstract

In this talk, I will first give a high-level introduction to the area of algorithmic foundations of programmable matter and to the types of systems and applications that have been motivating its development. I will then go through two models and respective sets of centralized algorithmic problems: 1. Transformations via rotation and 2. Growth processes. In the former, I will show in detail how any given pair of orthogonal convex shapes of the same size, which are additionally satisfying a color-consistency constraint, can be transformed into each other through a sequence of rotation operations only. In the latter, I will define the model and different types of possible growth operations and I will briefly discuss exact characterizations for restricted types of growth operations and first partial characterizations for the most general types. Depending on time, I might also touch upon reconfiguration and growth processes on graphs. I will conclude with a discussion on some interesting open problems.

**Τρίτη 20/12/2022 – 14:00**

**Αίθουσα Σεμιναρίων**

**ΤΜΗΥΠ**